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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,504	10/17/2003	Chai-Mei Jimmy Yu	INSIG1.001AUS	1989
20995 7590 02/08/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER CHOI, FRANK I	
			ART UNIT	PAPER NUMBER
			1616	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/08/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/688,504	<b>Applicant(s)</b> YU ET AL.	
	<b>Examiner</b> Frank I. Choi	<b>Art Unit</b> 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-15,19-23,26-31,33 and 35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-15,19-23,26-31,33 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/26/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-6,9,10,12,13,19-22,26-30, 33,35 contains the trademark/trade name TRITON.

Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a non-ionic surfactant and, accordingly, the identification/description is indefinite.

Contrary to the Applicant's arguments, a trademark is used to identify the source of the product not the product itself. The Applicant's citation to MPEP 608.01 (v)(I) is misplaced as that relates to use of tradename and trademarks as sufficient identification of a product in a Specification, not to use of the trademark or tradename in a claim. See MPEP Section 2173.05(u). As indicated above, the trademark TRITON is used to identify a particular product or material in the claim, as such, regardless of whether the trademark has a fixed and definite meaning for purposes of identifying a product in the Specification, the use of the same in a claim is improper.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3-15,19-23, 26-31,33,35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stathatos et al. in view of Yamada et al. (US Pat. 5,897,958), Ogawa et al. (US Pat. 6,106,955), Makita et al. (US Pat. 4,993,354) and Brill. (US Pat. 3,017,282).

Stathatos et al. discloses a method of preparing a nanocrystallite titanium dioxide thin film by a reverse micelle process using a titanium alkoxide, i.e. 0.2M of titanium isopropoxide, non-ionic surfactant, i.e. 0.2 M of Triton® X-100, water (0.4 M) and cyclohexane, where the substrate, glass, is coated by dipping, the coating is dried and then the organic components are burned out (pgs. 83-87).

Yamada et al. discloses that for convenience of handling the titanium oxide can be in the form of a mixture of titanium alkoxide and titanium acetylacetonate (Column 7, lines 29-56). It is disclosed that the titanium oxide containing film can be formed on various substrates, such as glasses and ceramics, by dipping, drying and heat-treating and that said film exhibits antibacterial activity (Column 8, lines 1-57). An example is disclosed in which prior to baking, the coating was dried at 120 degrees Celcius (Example 2).

Ogawa et al. discloses coating of stainless steel with a titanium oxide film process includes heat treatment at a temperature range of from 200 to 600 degrees Celcius at a time of 10 to 300 minutes (Column 8, lines 4-24, lines 38-53). It is disclosed that the titanium oxide film

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has antifungal and sterilizing functions and can be prepared by hydrolysis of metal alkoxide and a sol-gel method and dip coated (Column 6, lines 65-68, Column 7).

Makita et al. discloses dip coating of a substrate, such as ceramic, metal or glass, in a coating liquid containing titanium alkoxide which can be lowered from the substrate at constant rate, such as about 2 mm/sec or about 3 mm/sec, and the coating dried and then heated (Examples 1 and 2, Column 6, lines 1-8).

Brill discloses that addition of acetylacetone stabilizes alkyl titanate solutions and can redissolve or inhibit precipitation of alkyl titanate in water (Column 2, lines 43-54).

The prior art discloses a method of preparing a nanocrystallite titanium dioxide thin film by a reverse micelle process using a titanium alkoxide, i.e. 0.2M of titanium isopropoxide, non-ionic surfactant, i.e. 0.2 M of Triton® X-100, water (0.4 M) and cyclohexane, where the substrate, glass, is coated by dipping, the coating is dried and then the organic components are burned out. The difference between the prior art and the claimed invention is that the prior art does not expressly disclose using a 2,4-diketone, such as acetyl acetone, a specified withdrawal speed, a specified drying and calcining temperature and time, a substrate of stainless steel or method for killing bacteria and viruses. However, the prior art amply suggests the same as the prior art discloses that acetyl acetone will stabilize alkyl titanate solutions and controls the solubility of alkyl titanate in water, withdrawal speeds falling within the claimed ranges, drying and calcining temperatures and times overlapping or within the claimed ranges and that titanium oxide films have antimicrobial and sterilizing activity. Further, hydrolysis of titanium alkoxide is disclosed to be a process by which titanium dioxide films are formed. Since hydrolysis requires the interaction of the titanium alkoxide with water, one of ordinary skill in the art would expect

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that solubility of the titanium alkoxide in water would affect the rate of hydrolysis. As such, it would have been well within the skill of and one of ordinary skill in the art would have been motivated to modify the prior art as above with the expectation that addition of acetylacetone would stabilize the solution and by its affect on the solubility of the alkyl titanate in water would be effective in controlling hydrolysis of the titanium alkoxide; that the coated substrate would be effective against bacteria and viruses; that use of acetyl acetone would improve ease of handling titanium oxide; and that the withdrawal times and drying and calcining temperatures and times could be varied as desired, including within the claimed ranges, depending on coating thickness and coverage desired, substrate used and time necessary to dry the coating and for calcining the coating on the substrate.

The Examiner has duly considered the Applicant's arguments but them unpersuasive. The Applicant argues that the prior art does not suggest the addition of 2,4-diketone as a stabilizer to control the rate of hydrolysis of the titanium alkoxide. However, the prior art disclose that the addition of acetylacetone allows the alkyl titanate (See claim 2 of the present application that defines titanium alkoxide to include 1-6 alkyl titanate) to remain in solution when in contact with water. As such, since hydrolysis of titanium alkoxide requires contact of the titanium alkoxide with water, one of ordinary skill in the art would expect that since acetyl acetone increases the solubility of alkyl titanate in water that the addition of acetyl acetone would not only stabilize the solution but also control the rate of hydrolysis of titanium alkoxide.

Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention has been collectively taught by the combined teachings of the references.

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***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

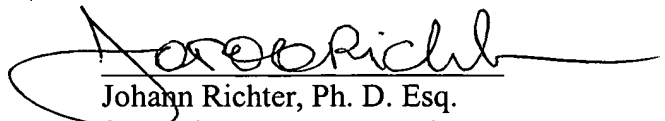
A facsimile center has been established in Technology Center 1600. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier number for accessing the facsimile machine is 571-273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Choi whose telephone number is (571)272-0610. Examiner maintains a compressed schedule and may be reached Monday, Tuesday, Thursday, Friday, 6:00 am – 4:30 pm (EST).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Dr. Johann Richter, can be reached at (571)272-0646. Additionally, Technology Center 1600's Receptionist and Customer Service can be reached at (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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February 1, 2007

  
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